Government of
Saskatchewan

Annual Report
1999-2000

Saskatchewan
Energy and Mines

101-00957/

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Letters of Transmittal

To Her Honour the Honourable Dr. Lynda M. Haverstock

Lieutenant Governor of Saskatchewan

Dear Madam:

I have the honour to submit the Annual Report of Saskatchewan Energy and Mines for the fiscal year ending March 31, 2000.

Respectfully submitted,

Eldon Lautermilch

Minister of Energy and Mines

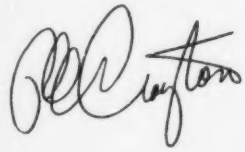
To the Honourable Eldon Lautermilch

Minister of Energy and Mines

Dear Sir:

I have the honour to submit the Annual Report of Saskatchewan Energy and Mines for the fiscal year ending March 31, 2000.

Respectfully submitted,



Ray Clayton

Deputy Minister

Saskatchewan Energy and Mines Overview

Our Vision:

Prosperity and economic strength from responsible energy and mineral development.

Department's Mission:

The mission of the Department of Energy and Mines is to achieve full and responsible development of Saskatchewan's energy and mineral resources to create jobs and sustain economic activity in Saskatchewan, and to optimize revenues to fund government programs and services.

Principles

- Service to our industry clients.
- Work in partnership to ensure full and responsible development of energy and mineral resources.
- Pursue excellence in all we do. We have a proven record of accomplishment and reliability, reflecting our high standards of quality and innovation.
- Recognize that our employees are our most valuable resource. Our success is a direct result of their knowledge, dedication, and professionalism.
- Prudently manage the public, financial and other resources entrusted to us so that Saskatchewan taxpayers receive maximum value for their tax dollars.
- Respect the worth and dignity of the individual and believe in individual responsibility. We strive to conduct ourselves with the utmost integrity.
- Work as a team and continually seek opportunities to nurture trust, communication, and co-operation.

Legislation:

The legislated mandate of the department is set out in the following Acts:

- *The Department of Energy and Mines Act* which provides the Minister with the responsibility for the exploration, development, management, and conservation of non-renewable resources and the development, management, and conservation of energy.
- *The Oil and Gas Conservation Act* which allows the orderly exploration for, and development of, oil and gas in the province and optimization of recovery of these resources.
- T*he Crown Minerals Act* which allows for the leasing of Crown mineral rights and provides authority to collect royalties on Crown dispositions.
- *The Freehold Oil and Gas Production Tax Act* which provides the authority to tax freehold oil and gas in the province.
- *The Mineral Taxation Act, 1983* which provides authority to tax mineral production and mineral rights.
- *The Mineral Resources Act, 1985* which provides for the orderly exploration, development, conservation, management, and primary production of mineral resources in Saskatchewan.
- *The Pipe Lines Act* which allows for the regulation of the conditions under which oil and gas may be transported by pipeline.

Core Businesses:

Resource Development - To provide exploration and geological data, studies, maps, and analysis of Saskatchewan's resources to assist in and to stimulate the development of oil, gas and mineral resources, and to sell Crown oil and gas rights.

Resource Policy – To provide analysis and recommendations regarding the impact of policies, legislation, and regulation on market trends, royalty/tax systems, research and development on industry performance in order to ensure optimal resource development and to promote and protect Saskatchewan's interests in intergovernmental issues involving the resource sector.

Energy Planning and Development – To develop policies and programs to encourage the responsible use of energy and the efficient and effective delivery of energy services in Saskatchewan, and to monitor and analyze market trends, industry performance and regulatory initiatives in the energy sector.

Resource Revenue Collection – To ensure the timely and optimal collection of revenues owing to the government from the development of Saskatchewan's energy and mineral resources.

Resource Regulation – The licensing, inspection and setting of guidelines for drilling and operation of oil and gas wells to ensure that industry activities are conducted in a safe, environmentally sound and responsible manner, regulating seismic activity, and the disposition and administration of Crown mineral, oil and gas rights.

Administration – To provide human resource, financial, communications, procurement, and accommodation services for the department.

Goals:

Energy and Mines has the following goals:

- Full and responsible development of Saskatchewan's energy and mineral resources.
- Responsible use and delivery of energy and energy services in Saskatchewan.
- Balanced and effective regulatory framework.
- Fair return to the province from the development of energy and mineral resources.
- Sound management and an attractive workplace.

Highlights of 1999-2000

1999-2000 saw a number of significant accomplishments by Saskatchewan Energy and Mines.

The department was instrumental in establishing the International Test Centre for carbon dioxide capture and sequestration at the University of Regina. The Test Centre includes a bench scale lab at the University and refurbishment of a commercial scale pilot plant at the Boundary Dam power station. The Test Centre is a partnership of the federal and provincial governments, private companies, utilities, and universities.

Reductions were made to royalty/tax rates for wells with high water-cuts to reduce the cost of operating these wells and to extend their useful life.

The government approved a coal royalty adjustment for Luscar Ltd.'s Bienfait mine that allowed the mine to remain competitive and to secure a three year contract to supply coal to Ontario, thereby keeping the mine open and securing more than 70 jobs in the community.

The first three research projects were approved under the Saskatchewan Petroleum Research Incentive program that provides royalty tax credits for research into ways of improving recovery rates for oil and gas and reducing operating costs.

A major database of diamond indicator chemistries from over 1,600 sample locations was compiled to assist the mineral exploration industry.

New seismic regulations were put into effect to replace *The Sedimentary Basin Geophysical Exploration Regulations, 1985.*

Mineral potential assessments were performed in a number of areas under consideration for land use plans or as part of the province's representative areas network.

After completing all of the Year 2000 compliance work and thoroughly testing our computer systems, the transition to the year 2000 was successful and no disruptions were reported.

A considerable amount of time and effort was devoted to identifying options for reducing greenhouse gas emissions and to developing a national climate change strategy in response to the federal government's commitment to the Kyoto Protocol.

The department worked with other agencies to analyze policy options for the electricity industry in Saskatchewan.

The department collected a record amount of non-renewable resource revenues in 1999-2000 due largely to the recovery in oil prices and the continued strength of the potash industry.

The department sponsored a series of healthy living workshops for staff and sponsored a one day trip to Wanuskewin Heritage Site as part of a cultural awareness initiative.

Plans for 2000-01

The department will continue to work on analyzing issues and developing options regarding a national climate change strategy for consideration by Energy and Environment Ministers later in the year. We will continue to consult with the provincial stakeholders group for advice on the approach and measures the government should take.

The department will provide policy advice on options for Saskatchewan as the electricity industry in North America undergoes transformation.

We anticipate there will be an excellent opportunity to develop an international research project to study carbon dioxide sequestration in the Weyburn oilfield.

We also plan to work with the oil industry to undertake field tests of prospective enhanced oil recovery technologies and to pursue the development of field scale technologies to partially upgrade heavy crude oil so it can be moved by pipeline without the addition of diluent.

The department will be discussing issues concerning orphaned wells with the oil and gas industry.

Work will continue on our efforts to reduce overlap and duplication of uranium mining and milling regulations between the federal and provincial governments that add to the cost of operating these facilities in Saskatchewan. A comprehensive review of the uranium royalty system will be undertaken.

We will also continue to pursue opportunities to increase geoscience research in order to better understand our geological potential, and to improve how the information is made available to industry in order to encourage more energy and mineral exploration and development.

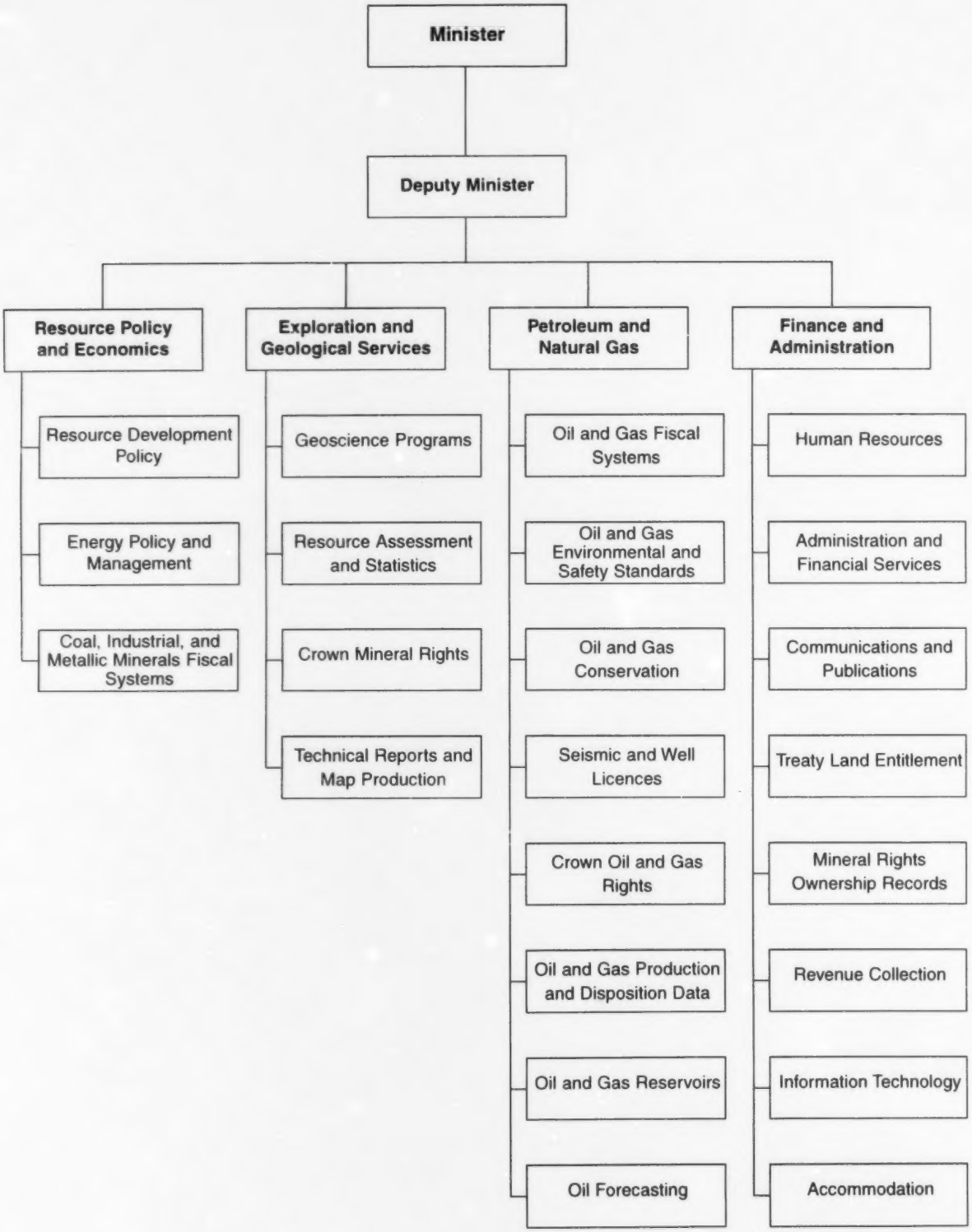
After lengthy consultations with stakeholders, *The Pipelines Act, 1998* and new regulations will be put into effect April 1, 2000. to replace *The Pipe Lines Act.*

We anticipate reaching an agreement with the federal government to reduce overlap and duplication in the collection of mineral statistics thereby reducing the paperwork burden on industry.

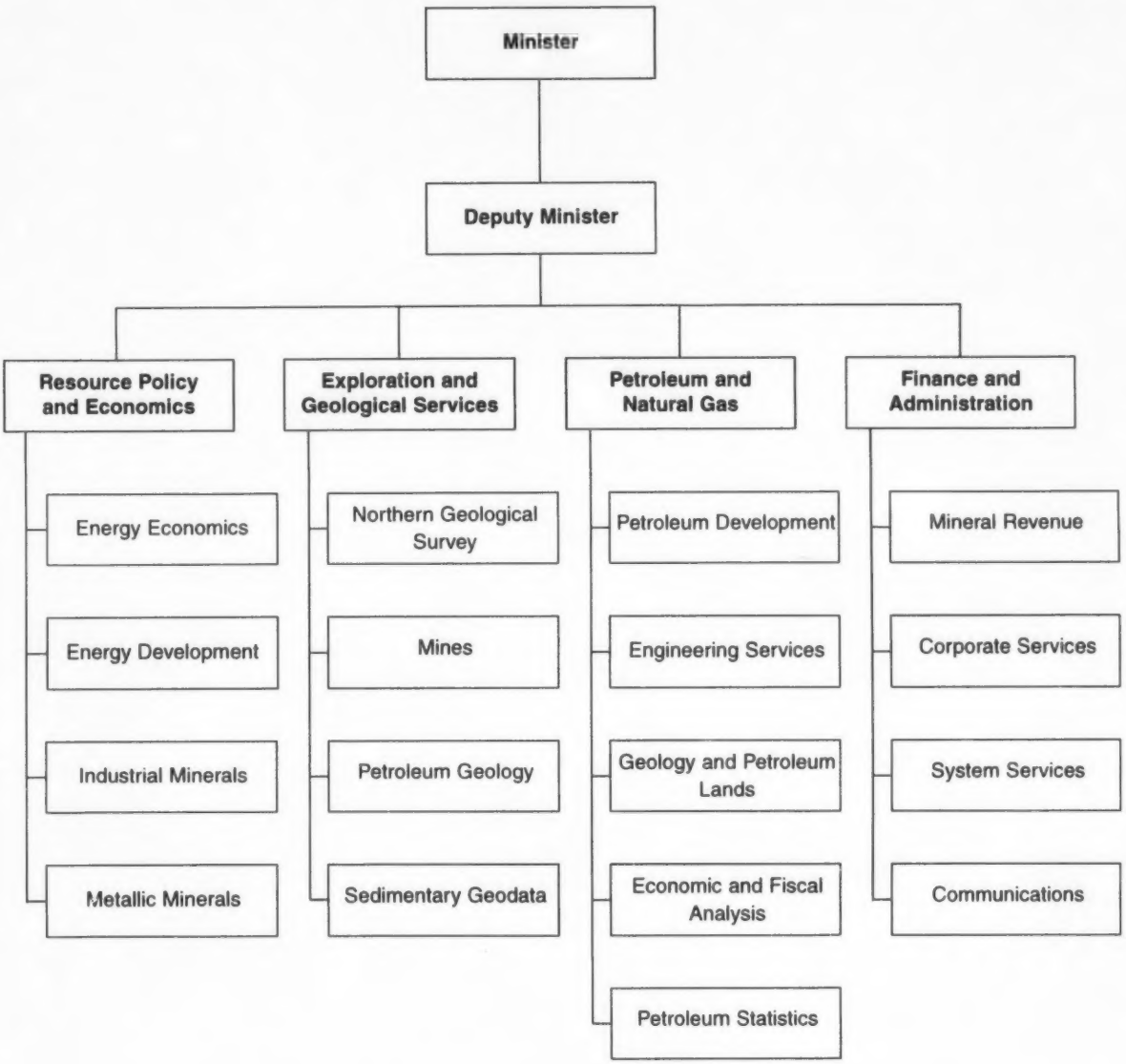
The department will hire additional staff to address the backlog in well information system.

The department plans to develop a strategic plan that will outline its vision, principles, goals, objectives for the upcoming fiscal year, and performance measures.

Department Organization Chart by Function



Department Organization Chart



Resource Development

The resource development program is designed to encourage the discovery and development of energy and mineral resources in Saskatchewan. Resource development is the largest and highest priority activity the department carries out. The program involves the following activities:

- conducting field projects including regional geological mapping, and site-specific studies of mineral deposits. These investigations assist the mineral industry in the search for new mineral deposits.
- maintaining and updating data files, converting data into geographic information system (GIS) compatible formats, and the use of digital technology for map production.
- extracting geological information submitted for newly drilled oil and gas wells and add the information to the department's computerized well information system. The data are used to improve knowledge of Saskatchewan's geology and to promote areas and geological formations likely to contain economic accumulations of petroleum.
- treating and storing drilling core and samples of drill cuttings for analysis by industry and research geologists to guide exploration and investment decisions.
- evaluating oil and gas reservoirs and wells to determine reserves for the purpose of optimizing development and to guide policy decisions on energy supply and demand.
- maintaining a major computer system to store geological data from all wells drilled in the province.
- selling Crown oil and gas rights for exploration and development of energy resources.

Without continued investment in exploration and development, resource production would decline and along with it the economic benefits of this resource development in terms of jobs, income and government revenues.

Resource development is strongly affected by commodity prices and world-wide supply and demand factors. As such there are constraints on the ability of the government to achieve a particular outcome.

1. Geoscience Program

a) Northern Geoscience

The northern geoscience program provides information through field projects including regional geological mapping, and site-specific studies of mineral deposits. These investigations assist the mineral industry in the search for new mineral deposits in northern Saskatchewan. They are also required in land-use planning to ensure that high mineral potential lands remain available for exploration while facilitating the establishment of representative ecological areas and parks. Where possible, collaborative research programs are undertaken with the Geological Survey of Canada (GSC) and partnered with the National Sciences and Engineering Research Council (NSERC) supported university research.

Major Activities and Results:

- The Wollaston Base Metals project has generated new exploration interest for base metals in the Wollaston Domain.
- The Wollaston Transect project, which includes a Ph.D. study partially funded by an industry consortium, is helping to clarify stratigraphic, structural, and metamorphic relationships in the Wollaston Domain. This work will have important implications in future uranium projects.
- Investigations of the Rae Province, to the northeast of Lake Athabasca, are providing fundamental information about geological relationships in a poorly understood area. This work will not only help evaluate the mineral potential, but will also provide critical background information in evaluating two large Representative Areas Network (RAN) site proposals.
- The study of the Murmac Bay Group is providing important insight into the extent, age, stratigraphy, tectonic history, and mineral potential of a sequence of rocks known to host numerous gold, nickel, copper, and uranium showings.
- The major La Ronge-Lynn Lake Bridge project, a co-operative project in conjunction with the GSC, is providing important insight into an area that joins mineral producing areas in Saskatchewan and Manitoba.
- The investigation of gold mineralization in the Byers Fault area has distinguished two different ages and styles of gold mineralization. This work should help to focus current exploration activities in an area that contains several significant gold occurrences including one past-producing mine.

b) Southern Geoscience

The southern geoscience program focuses on research, mapping and studies on industrial minerals, petroleum, and diamonds in the southern part of the province.

Major Activities and Results:

- Compilation of a database of diamond indicator chemistries from surveys of some 1,600 sample locations and 27,000 individual analyses. When published as a searchable web-based data file, users will be able to search for and download mineral chemistries and field data for specific areas of the province.
- Work continued on a study of Saskatchewan's sodium sulphate deposits. The study is a co-operative venture with the University of Saskatchewan, University of Alberta, sodium and potassium sulphate producers, and other agencies. The study is partially funded by a grant from The Strategic Initiatives Fund, administered by Saskatchewan Economic and Co-operative Development. An examination of Lydden Lake, west of Biggar, was begun.
- In co-operation with the GSC, data on gravity has been compiled to provide inferences on the composition and structure of deeply buried bedrock in southern Saskatchewan. This information is of interest to the petroleum, potash and diamond exploration industry.
- Work continued on a brine sampling program to assess the potential to support a brine-based chemical industry. Earlier work indicated that Saskatchewan's brines contain economic concentrations of bromine, iodine, lithium, and magnesium.

c) Database Development

Database development continued to focus on maintaining and updating existing data files, converting data files into geographic information system (GIS) compatible formats, and on the use of digital technology for map production.

The department also collects and catalogues technical data on mineral exploration of the province's resources. The technical information is put into the Saskatchewan Mineral Assessment File, which is an important database for mineral exploration and land use planning.

Mineral occurrence data is kept in the Saskatchewan Mineral Deposits Index and is used to compile maps that provide an appraisal of mineral resource potential.

Major Activities and Results:

- The Summary of Investigations maps included in the 1994-1999 map packages are available in both printed and digital format.
- A new Mineral Resource Map of Saskatchewan was compiled using GIS technology and is available to the public.
- Version 2 of the Geological Atlas of Saskatchewan CD-ROM, which is available with included viewing/query software, contains several geoscience data files linked to the Geological Map of Saskatchewan in GIS format. Updated and new data files will be added to the CD-ROM for annual release.
- Staff participated on a federal-provincial committee looking at implementing a national Internet-based network to access geoscience data from federal and provincial agencies.

Impacts:

- The introduction of digital technology will allow immediate and global access to the department's geoscience database.
- A total of 264 new assessment files were incorporated into the Saskatchewan Mineral Assessment File bringing the total number of records on hand to 15,632.
- Twelve records were added to the Saskatchewan Mineral Deposits Index, which raised the total records to 2,910. Visits to the Mineral Deposits Index on the department's web site totaled 4,770.

d) Mineral Resource Assessment Program

A mineral resource assessment program was initiated in 1996 in response to land-use planning requirements in the province. The assessments are conducted with a structured qualitative methodology that employs defined criteria. The methodology has been evaluated and approved by the mineral and petroleum industries.

A Memorandum of Understanding (MOU) with Saskatchewan Environment and Resource Management (SERM) formalized the use of mineral resource assessments and industry review of land-use proposals as part of the planning process.

A number of 1:250,000 scale mineral assessments were carried out in 1999-2000 in response to representative areas network (RAN) site proposals and to regional land-use plans that are being developed in many areas of the province.

Major Activities and Results:

Discussions on potential RAN sites with SERM and industry have been completed in a number of areas, including the Lobstick Lake site south of Cumberland House, six sites in the Amisk-Atik land use plan area, and a site on the east shore of Smoothstone Lake. Discussions are underway on three large sites in the far north, two sites in the Foster Lake region north of La Ronge, a large site in the Firebag Lake area, and two sites in the Dore-Lac La Plonge area. The use of the mineral resource assessments, the MOU, and active industry involvement in the process, have enhanced the ability of the province to achieve ecological objectives without compromising regions of known significant mineral potential.

Impacts:

Completion of mineral potential assessments has allowed for identification of areas of higher mineral potential as part of the land-use planning process. This is of extreme importance to ensure that restricted land-use candidate areas do not conflict unnecessarily with resource-rich regions.

e) Sedimentary Geology Data and Studies

The department extracts geological information submitted for newly drilled wells under *The Oil and Gas Conservation Regulations, 1985* and adds the information into the department's computerized Well Information System (WIS). Staff enhance the value of this data through their interpretation and research that assists the exploration activity of the oil and gas industry. The data are used to improve our knowledge of Saskatchewan's geology and to promote areas and geological formations likely to contain economic accumulations of petroleum. Due to high levels of oil and gas drilling activity during the 1990's, the department has been unable to keep its well information system up-to-date. Efforts are underway to reduce the backlog.

Major Activities and Results:

- Extensive support, including contributed papers and technical editing, was given to preparing Volume 1 of the Summary of Investigations 1999 released at the International Williston Basin Symposium.
- In collaboration with the Petroleum Technology Research Centre (PTRC), PanCanadian Petroleum Ltd. and other interested parties, the department developed plans to establish a major research project to monitor what happens to carbon dioxide after it is sequestered in the Weyburn oilfield. The project will help establish international standards for the sequestration of carbon dioxide.
- Collaborative research is providing new insights into the potential for further discoveries of shallow gas in the southwest part of the province.
- The increase in oil prices led to an increase in seismic activity and wells drilled. The department's backlog of well data to enter into the WIS grew by almost eight per cent to 6,891 wells due to this increased drilling activity. The department undertook a number of steps to improve the timeliness of data submissions by industry.
- Stratigraphic information was processed from 3,844 wells and added to the WIS. The backlog of stratigraphic data to process now stands at 2,985 wells, a decline of 30 per cent from 1998-99.
- Following consultations with industry, new seismic regulations were developed to streamline administration, eliminate duplication with federal requirements, and provide for greater consistency and compatibility with regulations in other provinces. A total of 404 seismic plans were approved comprising of 18,976 kilometres; and
- Well files were accessed approximately 100,000 times to retrieve data for industry and government, 35,000 times by staff, 55,000 times by industry, and 10,000 times by other government personnel.

f) Core and Sample Storage and Examination Facilities

The Subsurface Geological Laboratory in Regina treats and stores cores and samples of drill cuttings submitted under *The Oil and Gas Conservation Regulations, 1985.* The cores and samples are available for examination or analysis by industry and research geologists. The Precambrian Geological Laboratory in La Ronge houses both the offices of the resident geologists and the mineralized core collection, a valuable database for mineral explorers and geological research workers. Interim measures have been taken to deal with the space shortage in the La Ronge facility.

The resident geologists in La Ronge and Creighton monitor the mineral exploration industry in northern Saskatchewan and provide up-to-date information on exploration and mining activities and opportunities. The La Ronge office maintains files on current mineral claims, topographic maps, air photos, geological maps and reports, and assessment work submissions. The Creighton office has current claim maps.

Major Activities and Results:

- In response to industry requests, a confidential core examination room was built at the core lab in Regina.
- New cores were received from 224 wells totaling 2,882 boxes of core. This brings the total number of boxes in storage to 335,108.
- New samples of drill cuttings were processed from 827 wells and bringing the total number of vials in storage to 2.88 million.
- Geologists from 186 different organizations (oil and mining companies, consultants, universities, etc.) spent 1,524 person-days examining geological material stored in the Regina laboratory. In addition, almost 3,000 boxes were dispatched for outside analysis at the request of customers.
- A total of 2,457 metres of core from northern mineral deposits were added to the collection.
- Eighty-one people examined cores and the rock sample collection at the La Ronge facility.

g) Other Geological Services

Geoscientific reports and maps are edited, produced and sold to industry and the general public. The department has moved to a more cost-effective print on demand process for some of its products.

The Saskatchewan Geological Open House is the major forum at which geoscience agencies and the mining and mineral exploration industry present results from their current projects and research to each other and the general public.

Organizations presenting information included Saskatchewan Energy and Mines, the Geological Survey of Canada, the Saskatchewan Research Council, geology departments of the universities of Saskatchewan, Regina, Alberta, Queen's University of Belfast, and Memorial, and the mining and mineral exploration industries.

h) Public Information and Education

The objective of the public information program is to promote awareness of Saskatchewan's mineral and energy industry and our significant resource potential among the general public and to the mining and exploration industry outside the province. This is achieved by responding to specific inquiries, producing and distributing educational materials, developing and exhibiting promotional displays for major exhibitions, and publishing articles in trade magazines.

Major Activities and Results:

- Displays illustrating Saskatchewan's mineral resources and potential, and the activities of the department and the mineral industry, were exhibited at the Prospectors' and Developers' Association of Canada (PDAC) convention and the Canadian Institute of Mining, Metallurgy, and Petroleum in Toronto.
- The report "Saskatchewan Exploration and Development Highlights 1999" was distributed at the Geological Open House and at the PDAC convention. A promotional brochure "Saskatchewan – Discover Us – An Overview on Mining" was produced and distributed during the year.
- Several members of staff taught parts of an EdGeo Workshop for teachers who intend to teach earth science. In addition, staff assisted the Saskatchewan Mining Association in conducting a five-day teachers' mine tour to show teachers first-hand all types of mining activity in the province. The department also hosted tours of its Regina core lab for students and teachers.

2. Oil and Gas Reservoirs

The oil and gas reservoir assessment program evaluates oil and gas reservoirs, wells, and projects to determine reserves for the purposes of encouraging and facilitating resource development. Reservoirs and wells are also assessed when evaluating industry proposals for horizontal drilling, waterfloods, enhanced recovery, waste water disposal wells, off-target wells, commingling, unitization, and pipelines.

The reserve data are used extensively by the government in making policy decisions on energy supply and demand. These data are also used by the oil and gas industry in making investment decisions.

Industry applications are assessed promptly to ensure investments are not delayed.

The mandate for this program comes from *The Oil and Gas Conservation Act, The Crown Minerals Act, The Pipe Lines Act,* and their respective regulations.

Major Activities and Results:

- 1998 reserves were reviewed and published. The review showed an increase in initial oil reserves of 13.4 million cubic metres and similarly, an increase in initial gas reserves of 4.1 billion cubic metres. At the end of 1998, there were remaining oil reserves of 176.0 million cubic metres and remaining gas reserves of 73.2 billion cubic metres.
- Remaining reserve estimates for 1999 (as shown in Figures 1 and 2) show a slight increase for oil and a modest increase for gas from 1998.
- More than 900 applications for various projects such as horizontal drilling, waterfloods, enhanced recovery, waste water disposal wells, good production practice, off-target wells, commingling, unitization, and pipelines were reviewed.
- As shown in Figure 3, the approval of industry applications resulted in the drilling of 257 horizontal wells in 1999, representing $180 million in investment. Production from horizontal wells averaged 20.2 thousand cubic metres per day or 33.9 per cent of the total provincial production in 1999.
- Eighty-nine applications for new or expanded waterfloods, pressure maintenance wells and enhanced oil recovery projects resulted in significant investments in new facilities with great potential for increases in oil production. The 77 waste water disposal well application approvals allowed for more efficient and economical operation of oil facilities in an environmentally responsible manner.
- Thirty-two pipeline construction permits were issued in 1999 providing for new investments and more efficient transportation of oil and natural gas.

Figure 1 – Remaining Oil Reserves

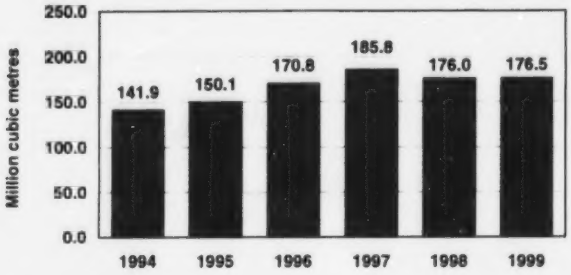


Figure 2 – Remaining Gas Reserves

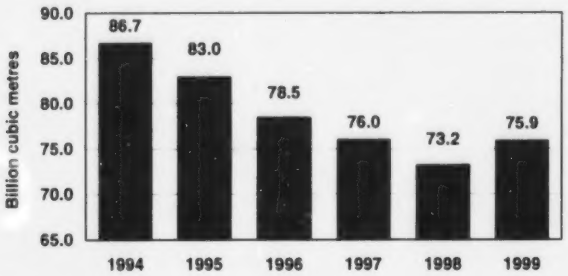


Figure 3 – Saskatchewan Horizontal Wells Drilled

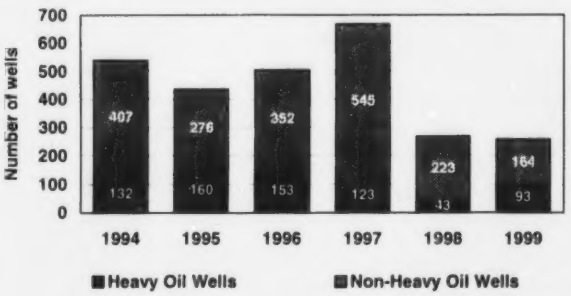
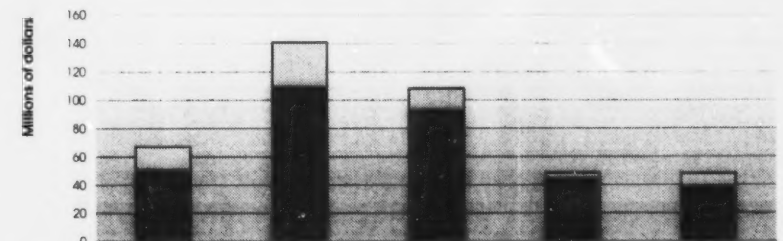


Figure 4 - Revenue Received from Sales of Crown Petroleum and Natural Gas Rights



	1995-96	1996-97	1997-98	1998-99	1999-00
Total	67.3	140.7	108.3	48.7	48.1
Lloydminster	16.4	31.3	15.0	3.8	9.1
Kindersley	15.0	27.1	30.7	6.1	17.9
Swift Current	11.8	7.2	11.5	23.7	7.3
Estevan	24.1	75.1	51.1	15.1	13.8

Fiscal Year

3. Sale of Crown Oil and Gas Rights

The province develops oil and gas mineral rights by selling the use of those rights to industry for exploration and development. The disposition of Crown oil and gas rights to industry is in the form of special agreements, special exploratory permits, exploration licences, permits, drilling reservations, and leases. Specific lands requested by oil and gas companies are advertised in six sales held during the year. The successful bidders in the sale are awarded the rights which permit companies to explore for and to produce oil and gas.

The mandate for this program comes from:

- *The Crown Minerals Act;* and
- *The Petroleum and Natural Gas Regulations, 1969* that provide the authority for disposition of Crown oil and gas rights by the sale process.

Major Activities and Results:

- Six sales held in 1999-2000 resulted in revenues of $48.1 million. Revenue derived from the sale of petroleum and natural gas rights for the past five fiscal years is shown in Figure 4.
- Mineral rights disposed of during the fiscal year totaled 1,279,062 hectares. This consisted of 12 special exploratory permits containing 890,537 hectares, 49 exploration licences covering 102,963 hectares, and 1,872 lease parcels containing 285,561 hectares.
- Leases sold as a result of deeper rights reversion totaled 58,710 hectares bringing in bonus bid revenues of $13.4 million or 27 per cent of sale revenue for this time period.

Resources:

The full-time equivalent of 80 staff were involved in resource development activity. Total expenses in 1999-2000 were $4,600,000, including salaries of $3,748,000 and other expenditures of $852,000.

Resource Policy

Resource policy activity is aimed at maintaining the competitiveness of Saskatchewan's fiscal and regulatory systems in order to encourage and sustain a viable and growing energy and mineral industry. It also ensures a fair return to the province in terms of jobs, economic activity and government revenues to fund programs and services. Policies and programs are also developed to encourage enhanced energy resource production through technological innovation. Active participation in federal-provincial forums can ensure that the province's interests are considered and measures taken to mitigate against negative impacts of domestic or international trade agreements and/or federal policy on the energy and mineral sectors in Saskatchewan.

Resource policy encompasses the following functions:

- analysis and recommendations on legislative, regulatory and policy changes in response to changing trends and emerging issues to ensure continued responsible development of the province's energy and mineral resources;
- liaison with industry on emerging issues of mutual concern;
- represent provincial interests in federal-provincial negotiations on domestic and international issues such as federal tax and regulatory policy and domestic and international trade agreements that impact on the oil, gas, and mineral resource sectors; and
- design, implement, and review royalty and tax systems for oil, gas, potash, uranium, gold, base and precious metals.

The mandate for this program comes from:

- *The Mineral Resources Act, 1985* that provides authority with respect to the exploration, development, management, and conservation of mineral resources;
- *The Oil and Gas Conservation Act* that provides the authority to implement natural gas policy; and
- *The Department of Energy and Mines Act* that provides authority with respect to the development, management, and conservation of energy.

1. Resource Development Policy

Major Activities and Results:

- Potash market development and potash research and development programs were reviewed to ensure the programs continued to meet their intended objectives. The programs focus on expanding markets in southeast Asia, particularly China, and on environmental concerns, such as waste management.
- The department was instrumental in the successful establishment of the Petroleum Technology Research Centre (PTRC) at the University of Regina. The PTRC is a new petroleum research group that brings together the expertise of the Saskatchewan Research Council and the University of Regina.
- The department undertook various initiatives to encourage energy resource production through technological innovation:
  - Several applications were processed in response to the Saskatchewan Petroleum Research Incentive announced in March 1998. This initiative will run for up to another three years and will provide up to $17.5 million of royalty/tax incentives to encourage industry to develop new technology for the oil and gas sector. The application of new technologies in the oil and gas sector will generate significant economic benefits for the province.
  - In co-operation with the North Dakota Geological Survey, the department organized and hosted the annual Williston Basin Horizontal Well Workshop in Regina in May 1999, to promote opportunities for oil field development with horizontal wells. Over 300 oil industry participants attended.
- The department participated on an interdepartmental committee to reduce the overlap and duplication between federal and provincial regulation of uranium mines in the province.
- The department represented Saskatchewan's interests in meetings with the federal government on the impact of the U.S.-Russia uranium trade provisions on the uranium mining industry.
- The department participated in the review and evaluation of the reclamation and decommissioning of abandoned uranium mine sites, and the federal-provincial labelling and safe handling guidelines for naturally occurring radioactive materials.
- Staff represented the government on the Intergovernmental Working Group on the Mineral Industry and the Subcommittee on Aboriginal Participation in Mining.
- The department co-ordinated a process to resolve issues surrounding the drilling of oil and gas wells near potash mines.
- The department participated, through membership in the Northern Mines Monitoring Secretariat, in providing support to the activities of the Environmental Quality Committees in monitoring uranium mine operations in northern Saskatchewan.

- The department continued to work with Saskatchewan Environment and Resource Management on mine reclamation and decommissioning issues.
- Forecasts of production, sales, price, revenue, employment, and investment were prepared for coal, natural gas, potash, uranium, and sodium sulphate. These forecasts assisted the government in budget planning, economic forecasting and planning, and negotiating federal-provincial equalization.
- Reports on natural gas, potash, and uranium were prepared on market events, pricing changes, industry activities, and related regulatory and policy developments in other jurisdictions.
- The department also worked with the federal government on a value-added initiative for minerals.

2. Mineral Royalty and Tax Policy

The industrial and metallic mineral royalty and tax policy program includes the monitoring and managing of royalty and tax systems for uranium, gold and base metals, potash, coal and other industrial minerals. The objective of the royalty and tax systems is to ensure a fair economic return to the province from resource development, while maintaining a healthy investment climate to encourage industry to explore and develop the province's resources.

The mineral royalty and tax systems are reviewed in response to changes in markets, prices, production and capital costs, and regulations and policy in other jurisdictions. Analysis and recommendations on changes to royalty systems, in response to these conditions, are provided to the government for consideration. Consultation with industry is a key consideration in developing changes to royalty and tax systems.

The mandate for the program comes from:

- *The Mineral Taxation Act, 1983* that provides the authority to tax freehold minerals in the province; and
- *The Crown Minerals Act* that provides the authority to collect royalties on Crown minerals in the province.

Major Activities and Results:

- Staff developed proposals to provide adjustments to Luscar Limited's Bienfait mine coal royalty and tax burden in order to preserve economic activity and jobs at the mine.
- Department staff completed the amendments to *The Potash Production Tax Regulations* and *The Mineral Taxation Act, 1983* to implement the changes announced in February 1998.
- Staff, in consultation with the gold and base metal industry, prepared new royalty regulations for precious and base metal mines in Saskatchewan. The regulations reflected the changes announced in the 1999-2000 budget.
- Work began on a full-scale review of the uranium royalty system. Consultations with the uranium industry will be an important feature of the review process.
- The department prepared amendments to *The Alkali Mining Regulations* pertaining to the changes to the sodium sulphate royalty system.
- Guidelines were developed for establishing new potash unit agreements and work began on a standard unit agreement.
- Industry proposals under the potash market development and research and development programs were reviewed and approved.
- Numerous issues arising from the administration of the royalty and tax systems were identified, reviewed, and resolved.

3. Oil and Gas Royalty and Tax Policy

The oil and gas fiscal systems program is responsible for developing and implementing Crown royalty and freehold production tax structures and incentives applicable to crude oil and natural gas production in Saskatchewan. The program ensures that:

- proper systems are in place in order for the province to receive a fair share of crude oil and natural gas revenues from producing companies;
- reasonable levels of exploration and development activity are maintained in the province; and
- maximum economic recovery of crude oil and natural gas is achieved from established reservoirs.

The royalty and tax structures and incentives are reviewed from time to time as technology and economic conditions change. Consultation with industry is a key component of all reviews.

The department also evaluates the impact of short and long-term world price movements and differential adjustments, provincial royalty and tax situations, federal income tax provisions, and technological changes related to the oil and gas industry in Saskatchewan. The impact is measured by projecting the trends in drilling activity, production, revenue, employment, and investment.

This information is required for internal government economic and budget planning purposes, for internal analysis of royalty and freehold production tax options, and for response to a number of inquiries from energy boards, municipalities, and oil producing, refining and transporting companies.

The mandate for the program comes from:

- *The Crown Minerals Act* and associated regulations which provide authority to levy a royalty on oil and natural gas produced from or allocated to Crown lands; and

- *The Freehold Oil and Gas Production Tax Act* and associated regulations that provide authority to levy a production tax on oil and natural gas produced from or allocated to non-Crown lands.

Major Activities and Results:

- New regulations titled *The Weyburn Unit CO_2 Crown Oil Royalty Regulations* and The *Weyburn Unit CO_2 Freehold Oil Production Tax Regulations* were developed and put in force retroactive to July 1, 1998.
- Regulation amendments were developed to allow credits pursuant to *The Petroleum Research Incentive Regulations* to be deducted from royalties and taxes otherwise payable.
- Through consultation with the oil and gas industry, a new program was developed to extend the producing lives and to improve the recovery rates of high water-cut oil wells, effective August 24, 1999.
- During the year, six net royalty leases were analyzed for purposes of converting them to standard Crown leases. Agreements were reached with the companies involved and all six leases were converted to standard Crown leases. The conversions extend the life of the affected wells and the corresponding benefits to the province.
- A new policy for valuing the Crown share of crude oil was developed and implemented during the year. The new policy, which will be effective April 1, 2000, allows producers to pay royalties on the actual arm's length price received for the sale of oil.
- Over 2,700 new well licences were reviewed to determine the proper Crown royalty and freehold production tax structure and incentive volume for the wells;
- Monthly adjustments were made to the basic Crown royalty and freehold production tax structures for oil and gas production in accordance with established price sensitive policies;
- A new policy was developed to maintain deep oil plays by extending the deep oil well definition to include wells drilled before 2002 that are located east of the third meridian and south of township 35 that produce from a zone within a geological system older than the Missippian Period, excluding the Bakken zone; and
- Numerous forecasts were prepared to measure the economic and financial impact of the oil industry.

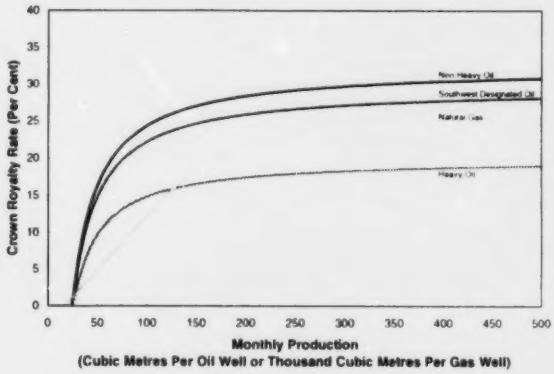
Impacts:

The increase in crude oil prices and continued strength in natural gas prices significantly contributed to a rebound in drilling activity. In 1999, 2,428 oil and gas wells were drilled compared to 1,690 in 1998.

In 1999-2000, the average royalty/tax rate for oil and gas was approximately 15.1 and 15.7 per cent respectively resulting in a provincial average of approximately 15.2 per cent.

Figure 5 illustrates the March 2000 Crown royalty curves for vertical oil wells (heavy and non-heavy) and gas wells. The curves, which are adjusted every month in accordance with established price sensitive policies, apply after volume incentives have been produced.

Figure 5 –Crown Royalty Curve



The following table entitled "New Oil and Gas Wells Drilled in 1999" provides a breakdown of drilling.

New Oil and Gas Wells Drilled in 1999

Well Category	Producing	Abandoned	Service	Total
Oil:				
Conventional:				
Vertical	923	122	79	1,124
Horizontal	237	1	1	239
Total	1,160	123	80	1,363
Enhanced Oil Recovery (EOR[1]):				
Vertical	9	0	n/a	9
Horizontal	18	0	n/a	18
Total	27	0	n/a	27
Total Oil Wells	1,187	123	80	1,390
Gas:				
Total (all vertical)	993	45	0	1,038
Provincial Total	**2,180**	**168**	**80**	**2,428**

n/a means "not available"

[1]EOR oil means oil recovered due to the implementation of enhanced oil recovery projects. These projects include firefloods, steamfloods, and CO_2 floods but exclude waterfloods.

Resources:

Resource policy activity was carried out by the full-time equivalent of 14.5 staff at a salary cost of $909,000. Other expenses totaled $113,000. Total costs were $1,022,000.

Energy Planning and Development

The energy program involves the development of policies and programs to encourage the responsible utilization of energy and the efficient and effective delivery of energy services in Saskatchewan. Policies and programs are developed to promote the efficient use of energy by Saskatchewan consumers, to improve the competitiveness of businesses through improved energy management practices, and to investigate the environmental impact of energy utilization. Policies are also developed to respond to changing circumstances in North America towards a more open and competitive market for the delivery of electricity and natural gas services to customers.

Developments in other jurisdictions that have the potential to affect the production and marketability of our energy resources and the use and delivery of energy and energy services in Saskatchewan are monitored. The department represents the government in a number of intergovernmental initiatives examining issues related to responsible development of our energy resources.

The mandate for this program comes from:

- *The Department of Energy and Mines Act* which describes the Minister's authority and responsibility with respect to energy management and provides authority to enter into agreements with other governments; and
- *The Mineral Resources Act, 1985* which provides authority for conservation of mineral resources.

Major Activities and Results:

- Staff were involved in a number of initiatives related to greenhouse gas emissions and global climate change including:
  - working with the University of Regina to create the International Test Centre for carbon dioxide capture;
  - participating in the National Air Issues Co-ordinating Committee (NAICC) and several of its subcommittees and working groups. The NAICC is responsible for implementing Canada's National Action Plan on Climate Change for developing a Canadian response to the Kyoto Protocol;
  - participating in the International Energy Agency's greenhouse gas program;
  - representing Saskatchewan in the greenhouse gas emissions reduction trading (GERT) pilot project. The pilot encourages voluntary investment in emission reduction projects and the trading of emissions reductions to lay the groundwork for a possible future emissions reduction trading system. Department staff acted as project review team leader for two projects.
  - maintaining a toll-free energy conservation telephone line to provide energy conservation information to Saskatchewan consumers. Some 236 information requests were handled and four referrals were made to the Saskatchewan Research Council for more detailed advice; and
  - updating provincial activities in support of the National Voluntary Challenge and Registry.
- In co-operation with Natural Resources Canada, the following activities were undertaken:
  - the EnerGuide for House Program in Saskatchewan in co-operation with the Sun Ridge Group;
  - the R2000 Home Certification Program in Saskatchewan, in co-operation with the Saskatchewan Home Builders Association;
  - the Canadian Agricultural Energy End Use Data and Analysis Centre at the University of Saskatchewan;
  - development of the Prairie Adaptation Research Co-operative (PARC); and
  - sharing of information on energy efficiency and conservation.
- The department represented Saskatchewan's interests in energy sector discussions in the negotiations between Canada and the provinces for an agreement to reduce internal trade barriers within Canada.
- The department represented Saskatchewan's interests in the federal-provincial working group on electricity reliability and in several industry conferences on electricity reliability issues.
- Staff continued to monitor and provide policy advice on the changing circumstances in the North American electricity industry with respect to more open and competitive markets.
- The department represented Saskatchewan on a federal task force examining the opportunities for harmonizing the regulation of oil and natural gas pipelines in Canada.

Resources:

The energy planning and development activity involved the full-time equivalent of 12 staff for a salary cost of $688,000. Other expenses totaled $963,000. Total expenses amounted to $1,651,000.

Resource Revenue Collection

The department has a rigorous financial system in place to record production and disposition information, calculate royalties and taxes owing, and issue billings. An appropriate tax audit presence ensures a high degree of compliance by resource companies and additional royalties and taxes for the province.

The revenue collection activity ensures that revenues owed to the province are collected and includes the following specific activities:

- collecting data on the production and disposition of oil, gas, water and associated products from all producing wells in the province;
- calculating oil and gas royalties and taxes owed by more than 2,300 operators and working interest owners and issuing monthly invoices for any discrepancies in the amounts owed;
- auditing royalty returns to ensure that all revenues owed are received;
- maintaining major computer systems to store and analyze oil and gas production and disposition data, calculate royalties and taxes owing, and issue billings to operators and working interest owners;
- calculating and making compensation payments to former mineral rights owners; and
- administering the sale or transfer of Crown mineral rights to the federal government on behalf of Saskatchewan Indian bands under Treaty Land Entitlement and specific claims.

1. Revenue Collection Program

The revenue collection program ensures that non-renewable resource revenues, mineral rights taxes and other fees owing to the province are collected. The revenue collection program also administers mineral land ownership records, and ensures that mineral compensation and trust expenditures are made appropriately.

The mandate for this program comes from:

- *The Crown Minerals Act* and associated regulations which prescribe royalties, rentals, and fees payable by persons engaged in exploring, developing, and producing minerals that are owned by the Crown and prescribes penalties to be applied to late payments;
- *The Freehold Oil and Gas Production Tax Act* and associated regulations which prescribe amounts payable by producers of oil and gas from wells drilled on freehold lands; and
- *The Mineral Taxation Act, 1983* which prescribes base and profit-related payments due from potash producers, production taxes payable on freehold coal, and mineral rights tax payable by taxable mineral owners.

Major Activities and Results:

- All cash was received, recorded, and deposited on a daily basis. A record level of revenue totaling $951.6 million was received. In addition, year-end accruals were calculated and applied to various revenue accounts in accordance with government accounting practices.
- A total of 38 audits of resource companies were completed during the year resulting in additional Crown revenues of $9.2 million.
- Collection activity on delinquent accounts continued throughout the year. Uncollectible accounts totaling $862,000 were written off after all collection action had been exhausted.
- Surrenders, assignments, and transfer documents pertaining to mineral rights were processed throughout the year to ensure the integrity of the Crown and the freehold mineral ownership records and the mineral rights tax database.
- The department held numerous meetings with royalty/tax payers to convey information, answer questions, explain regulatory or policy changes, and seek input on royalty/tax related matters.
- Compensation payments to former mineral owners totaled $1,064,500, which includes the present value of non-cash, alternative compensation arrangements that replaced annual cash payments to two companies.
- The department hosted an interprovincial meeting of mineral revenue collectors to discuss issues of common interest.

2. Computer Systems

Computer system services involves developing systems, acquiring and maintaining computer hardware and software, contracting for consulting and mainframe services, administering the department's computer network, providing system security, operating a help desk for staff, and providing data entry.

The department currently operates a number of major systems on a regular production basis. System analysis, development, and maintenance functions are performed

by department staff. Mainframe services are contracted to Information Systems Management Corporation (ISM).

Major Activities and Results:

- Work on Year 2000 compliance was successfully completed on time. The turnover to the new century went smoothly and all systems were tested to ensure their operation after January 1, 2000.
- Changes to the oil and gas royalty system for high water-cut wells were made and implemented in 1999-2000.
- During the year, 25 per cent of desktop hardware was upgraded.
- The potash statistics system was redeveloped.
- The method of calculating the location data associated with wells drilled in the province was changed which improved the accuracy of the data and now includes longitude and latitude values.

3. Indian Land Claims

The objective of the program is to facilitate the transfer of lands to Indian reserves in Saskatchewan through the implementation of the mineral provisions of Indian land claim settlement agreements. Two types of land claims are:

- Treaty land entitlement (TLE) claims arising from the implementation of Treaty Land Entitlement Agreements between the province, the federal government and various Indian Bands; and
- Specific land claims arising from the implementation of Specific Claim Settlement Agreements between the federal government and Saskatchewan Indian bands.

The mandate for this program comes from *The Saskatchewan Natural Resources Transfer Agreement (Treaty Land Entitlement) Act, The Treaty Land Entitlement Implementation Act* and subsequent settlement agreements with individual Bands, and *The Crown Minerals Act.*

Major Activities:

- The department is currently engaged in the transfer and sale of Crown mineral rights to the federal government on behalf of Indian bands in Saskatchewan. This includes:
  - reviewing and approving all Crown mineral selections;
  - determining the level of compensation that may be required by the province for purposes of transferring Crown mineral rights to the federal government; and
  - preparing Orders in Council approving the transfer of the mineral rights to the federal Crown.
- Other activities include information workshops with the Indian bands and the energy and mineral resource industries, interdepartmental meetings to resolve process and policy issues, and monitoring the status of Crown mineral rights subject to Indian land claims.

Results:

- In 1999-2000, the department reviewed 230,333 hectares of mineral rights requested by Entitlement Bands. Since inception of TLE agreements in 1992, the department has reviewed a total of 1.4 million hectares of mineral land selections.
- A total of 19,751 hectares of provincial Crown mineral rights were approved by Cabinet for transfer to the federal government during this period to become new reserve lands. This brings the total number of hectares of Crown minerals transferred under these agreements to 133,439.

4. Oil and Gas Production and Disposition Data

The oil and gas data program collects data related to the production and disposition of crude oil, natural gas, water, and associated products from all producing wells in the province.

The database is used in the collection of royalties and taxes, forecasting, monitoring, and the evaluation of Crown lands under disposition. It is also used to analyze and develop resource management policy and fiscal regimes and to establish, monitor, and enforce oil and gas conservation, and environmental and safety standards.

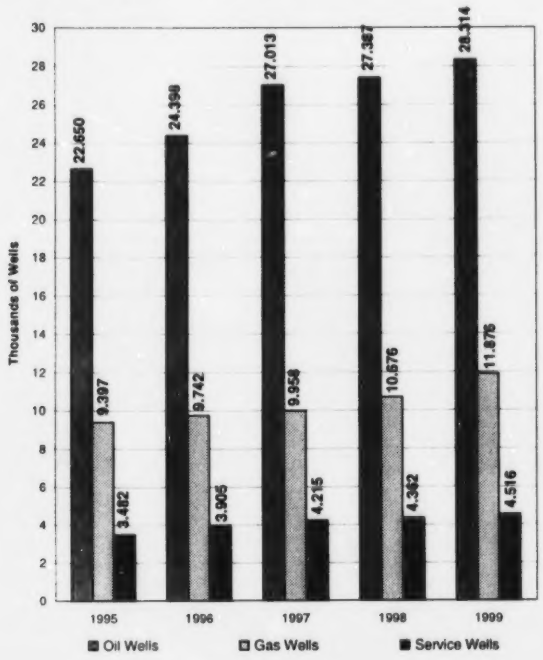
As well, the oil and gas industry relies extensively on the database for production information to facilitate its exploration and development activities in the province. Data is also used by consulting firms, federal and provincial government agencies, universities, and the general public.

The mandate for this program comes from *The Oil and Gas Conservation Act* and regulations that require companies to submit monthly statistical data and any other information to the department.

Major Activities and Results:

- In excess of 55,000 statistical reports on the production and disposition of crude oil, natural gas, water, and associated products from all producing wells in the province were processed and verified each month. The number of wells capable of production rose by 2,281 wells to 44,706. The number of wells capable of production by well type for the past five years is shown in Figure 6.

Figure 6 - Wells Capable of Production /Injection



- Staff also provided user support and performed testing of several Well Information System (WIS) functions and programs in order to accommodate oil royalty/tax structure changes that were made during the fiscal year.
- After extensive consultation with representatives of Saskatchewan producers, industry associations including the Canadian Association of Petroleum Producers (CAPP) and the Small Explorers and Producers Association of Canada (SEPAC) and vendor companies, several policy initiatives were developed and implemented regarding compliance enforcement for data submissions. By the end of the fiscal year, the compliance enforcement initiative has proven to be successful in bringing industry attention to the importance of timely data submission that has reduced the proportion of late and delinquent reports from 20 per cent to six per cent.
- A total of 2,750 status updates on new and existing wells and units were made due to changes related to the date of first production, recompletion, reclassification, and royalty and tax eligibility.
- 1,355 requests from industry for suspension of an active well or for production resumption of an inactive well were handled to facilitate reporting and royalty and tax collection.
- Some 5,370 applications related to facility codes and change of operatorship were reviewed and processed to ensure proper reporting and maintain the integrity of the database.
- The terms and conditions of all gas contracts, invoices, transportation agreements, and heating value information were analyzed and entered into system files, in order to facilitate various price monitoring functions required for the verification of reported sales data. The accuracy of the sales information directly affects royalty/tax revenues.
- Some 925 requests for statistical information from industry clients, federal and provincial government agencies, consulting firms, universities, and the general public were handled on the basis of a one-day turnaround.

Resources:

The resource revenue collection activity involved the full-time equivalent of 56.5 staff for a salary cost of $2,588,000. Other expenses were $1,775,000. Total expenses amounted to $4,363,000.

Resource Regulatory Programs

The resource regulation program is responsible for the licensing, inspection and setting of guidelines for the safe and environmentally responsible exploration, drilling and operation of oil and gas wells, battery sites, resolving disputes between operators and landowners, and the disposition and administration of oil, gas and mineral rights.

The resource regulatory activity includes the following specific items:

- review all applications and issue licences to explore, drill, operate and produce oil, gas and related service wells. This ensures that Crown oil and gas rights have been properly acquired, wells are properly located, and drilling and casing requirements are met according to provincial regulations;
- establish guidelines for, and monitor the drilling, production and well abandonment activities of the oil and gas industry;
- monitor and inspect well sites and help resolve disputes between operators and landowners;
- establish pool boundaries, specify spacing between wells, set and monitor production allowable limits for new wells;
- review geophysical licences and seismic plans;
- issue rights to mine minerals, monitor leases and production activity from approved mine sites, issue claims for mineral exploration, and review requirements to ensure that claims are still in good standing;
- review mine excavation plans, collect and publish mine production data; and
- disposition and administration of Crown oil, gas and mineral rights.

1. Oil and Gas Environmental and Safety Standards

The environmental and safety standards program establishes guidelines for, and monitors the drilling, production, and well abandonment activities of the oil and gas industry. Policies and procedures are established for casing wells, handling of drilling fluids, reporting and cleaning up spills, safe distances for wells and equipment, injection well design, and well abandonment. Ongoing monitoring of oil and gas industry activity ensures operations are being conducted in accordance with established guidelines and that environmental impact is negligible.

Field offices are located in Lloydminster, Kindersley, Swift Current, and Estevan.

The mandate for this program comes from:

- *The Mineral Resources Act, 1985* and *The Seismic Exploration Regulations, 1999* which establish operating procedures for seismic activities; and
- *The Oil and Gas Conservation Act* and associated regulations which govern industry activity as it pertains to drilling, production, well and facility abandonment, site restoration, reclamation and remediation.

Major Activities:

- *The Saskatchewan Drilling Waste Management Guideline* was completed and distributed to all companies licensed to operate oil and gas wells in Saskatchewan, rural municipalities that have oil and gas production within their boundaries, drilling contractors, environmental consultants and industry associations. The guideline consolidates and replaces seven different drilling waste management guidelines to simplify industry use. The guideline incorporates the most up to date environmental protection standards and pollution prevention techniques available for the handling, containment, management, and disposal of drilling wastes.
- To ensure the highest environmental protection standards are achieved on a consistent basis, the department has developed a computer software program to assist operators in calculating the appropriate loading rates for disposing of drilling fluids on cultivated lands.
- Staff made several presentations in Saskatchewan and Alberta to environmental professionals and technicians involved in the area of drilling waste management.
- All nine environmental guidelines published by the department are posted on Saskatchewan Energy and Mines web site. Copies of the guidelines are also available at all Saskatchewan Energy and Mines offices.
- A number of new environmental guidelines were prepared and distributed to industry, governmental agencies and stakeholders for review. These guidelines, which will be completed in 2000-01, include:
  - *Draft Interim Policy for Discharge of Fresh Surface Water from Upstream Oil and Gas Facilities.*
  - *Draft Interim Guidelines on Landfarming Oily Byproducts with High Clay Content.*
  - *Saskatchewan Hydraulic Fracturing Fluids and Propping Agents Containment and Disposal Guidelines.*

- *Saskatchewan Interim Industrial Landfill Waste Acceptance Criteria for Upstream Petroleum Industry.*

Work also began on the following guidelines that will be distributed for comments in 2000-01:

- *Drilling and Service Rig Flare Tank Designs and Specifications.*
- *Comprehensive Guidelines on Upstream Storage, Containment and Pollution Prevention.*
- Revisions to the *Upstream Petroleum Industry Waste Management Guidelines.*

- Since the introduction of Saskatchewan Petroleum Industry/Government Environmental Committee (SPIGEC) guidelines, field staff have been actively enforcing the requirements of the guidelines as well as providing on-demand technical assistance and expertise to industry and the general public.
- Staff actively participated with other agencies in the development of comprehensive land-use strategies for the Whitehood, Dore/Smoothstone, Mistatim Marsh, Bjorkdale West Forest, and Stove Creek areas.
- Staff continued to provide rural municipalities with technical and consultative guidance pertaining to the sustainable and balanced development of the upstream petroleum industry within their municipal boundaries. The Rural Municipality of Miry Creek No. 229 now has its development plan out for final review, while work is progressing on a development plan for the Rural Municipality of Maple Creek No. 111.
- The department continued to provide assistance to Saskatchewan Agriculture and Food and Saskatchewan Environment and Resource Management (SERM) in their efforts to harmonize approaches with respect to the leasing of Crown land for the purpose of oil and gas development.
- Staff are active members of environmental and safety committees including the Saskatchewan Petroleum Industry/Government Environmental Committee, the Canadian Petroleum Safety Council, and industry's Drilling and Completion Committee.
- Field staff conducted 28,937 well, battery, and rig site inspection, monitored the clean up of 1,531 oil and salt water spills, and assisted in resolving 49 landowner complaints.
- During the 1999 calendar year field staff inspected drilling rigs and reported pertinent information on the 2,428 new oil and gas wells that were drilled in the province. Workover programs were also approved, monitored and reported.
- Field staff conducted 2,687 inspections at water injection and disposal facilities to ensure proper water handling and injection well bore integrity.
- Three new upstream waste processing facilities were approved this fiscal year. These new facilities, in conjunction with the existing facilities, provide state of the art recovery, recycling, containment, treatment and disposal technologies for by-products and wastes generated by the upstream petroleum industry throughout the province.

Results and Impacts:

- Staff continued to work with Saskatchewan Agriculture and Food and SERM in developing and implementing comprehensive land-use strategies for Crown lands administered by these departments with regards to solving both real and perceived problems which arise from time-to-time in the process of developing petroleum and natural gas resources.
- Inspections conducted by field staff ensured that industry complied with regulations governing their operations, thereby minimizing environmental impacts.
- Saskatchewan Energy and Mines' environmental guidelines are rapidly being acknowledged inter-provincially as being practical and effective.

2. Oil and Gas Conservation

The oil and gas conservation program establishes, monitors, and enforces sound oil and gas conservation standards to ensure responsible development of the province's oil and gas reserves.

The program ensures pool boundaries and well spacing orders are current and establishes and monitors production limitations to ensure that they are not exceeded.

The mandate for this program comes from:

- *The Oil and Gas Conservation Act;*
- *The Crown Minerals Act;* and
- *The Pipe Lines Act,* and their associated regulations which provides the rules under which the oil and gas industry must operate.

Major Activities and Results:

- The ongoing activities of establishing pool boundaries and well spacing orders were carried out with 123 orders issued in 1999.
- Production allowable limits were issued for all new oil and gas wells unless good production practices were granted.
- Oil and gas production was monitored to determine if well production exceeded that allowed. Notification and warnings were sent to all companies that exceeded their allowables.

3. Seismic and Well Licences

Under the seismic and well licensing program, the department reviews applications and issues licences to explore, drill, operate, and produce oil, gas, and related service wells. Seismic contractors, crews, and blasters are licensed to ensure certain operating standards are met, and to maintain a current record of companies conducting seismic work in the province. By licensing the drilling and operation of oil, gas, and service wells, the department ensures Crown mineral rights have been properly acquired, wells are properly located, and drilling and casing requirements are met according to regulations.

The number of well licence applications issued during the 1999-2000 fiscal year averaged 289 per month. The increase in the number of licence applications received is directly related to the increase in the price for oil and gas.

The mandate for this program comes from:

- *The Mineral Resources Act, 1985* and *The Seismic Exploration Regulations, 1999* which provide the authority for seismic licences; and
- *The Oil and Gas Conservation Act* and associated regulations which govern the licensing of oil, gas, and service wells.

Major Activities and Results:

- During the fiscal year, 3,474 well licences, 86 seismic licences, 129 crew certificates, and 658 blaster permits were issued.
- A total of 4,966 well transfers and 1,989 well name changes were registered. There were also 988 name changes registered as a result of corporate name changes and amalgamations.

4. Mine Data and Mineral Statistics

Under the mine data and mineral statistics program, the department monitors mining developments, collects, processes, and analyses production and sales data, reports exploration expenditures, prepares metallic mineral (except uranium) royalty forecasts, issues mineral test hole permits, authorizes potash well abandonments, processes revisions in potash lease or unitized areas, and maintains historical records, including mine plans. It also co-ordinates the review of all environmental project submissions referred to the department and provides input into the Environmental Assessment Technical Review Panel for mining development projects and into the Federal-Provincial Committee on Mineral Statistics.

Major Activities and Results:

- Thirty mining operations including potash, uranium, coal, gold, base metals, salt, clay (including bentonite), calcium chloride, and sodium and potassium sulphate were in active production in 1999-2000.
- Production began at two new uranium mines, McClean Lake and McArthur River. Operations at the Eagle Point mine at Rabbit Lake will be suspended from March 31, 1999 to March 31, 2001. The Cluff Lake mine will cease operations by the end of 2000. Cogema Resources announced in May 1999 that it had acquired interests from Cameco in the McArthur River, Key Lake and Midwest projects.
- The Seabee mine remained the only primary gold mine in the province.
- Base metal (zinc and copper) production from the Callinan mine at Flin Flon continued and was augmented by copper and zinc production from the Konuto mine adjacent to Denare Beach.
- Advanced exploration programs were carried out for base metals and silica sand at McIlvenna Bay near Hanson Lake.
- Ten potash mines produced almost 8.0 million tonnes of product.
- The amalgamation of Manalta Coal Ltd. and Luscar Ltd. resulted in the reorganization of five previously operating mines to four separate operations, with Luscar Ltd. becoming the sole operator.
- Expenditures by industry on mineral exploration for calendar 1999 and 1998, excluding those on the test mines, are shown below:

Mineral	1999 No. of Programs	1999 Expenditure ($ millions)	1998 No. of Programs	1998 Expenditure ($ millions)
Uranium	8	$14.00	12	$22.40
Gold	7	1.05	9	2.76
Base metals	8	5.53	8	3.54
Diamonds	5	1.43	4	1.06
Other	5	1.07	4	0.35
Total	**33**	**$23.08**	**37**	**$30.11**

- During the fiscal year, 444 statistical reports from various sources were analyzed and processed. Numerous requests for statistical information were also handled.
- The department authorized the plugging and abandonment of 11 potash production wells at the Belle Plain mine and processed two potash unit areas and two potash lease areas.
- Staff reviewed 15 excavation plans submitted by mining companies.
- The department issued permits for drilling of two mineral test holes for diamonds and test holes for coal at the Poplar River mine.
- Discussions on developing a co-operative and efficient arrangement for collecting and sharing mineral statistics with federal agencies were continued.

- Staff conducted eight reviews of Environmental Impact/Assessment projects.
- Staff prepared the Mineral Statistics Yearbook for 1998.

5. Crown Mineral Rights

The department is responsible for the disposition, development, and conservation of all Crown minerals and for auditing the work and financial credits claimed in submissions required in order to keep mineral rights in good standing. The department carries out this responsibility under the following regulations:

- *The Mineral Disposition Regulations, 1986* for uranium, base and precious metals, and other minerals;
- *The Quarrying Regulations, 1957* for clay, bentonite, silica sand, and other quarriable substances;
- *The Alkali Mining Regulations* for sodium, potassium, and ammonia sulphate;
- *The Coal Disposition Regulations, 1988* for coal; and
- *The Subsurface Mineral Regulations, 1960* for potash and salt.

Major Activities and Results:

- Under *The Mineral Disposition Regulations, 1986*, a total of 594 claims were staked in 1999-2000 covering 256,554 hectares. This represents an increase in the number of claims staked, but a decrease of 39 per cent in the area staked compared to the previous year. Most of the staking activity was related to uranium exploration. The total number of claims in good standing on March 31, 2000 was 3,028 covering a total of 2.6 million hectares.
- Staff reviewed 1,509 submissions of mineral assessment work that represented $24.2 million of exploration work.
- Staff completed the conversion of mineral disposition maps and files into digital GIS compatible format.
- The department established 22 Crown Reserves that exclude lands in these sites from further exploration and development.
- Staff participated in the interdepartmental review of Crown land policies.
- The department prepared downloadable forms and guidelines on its web site for the acquisition and administration of various Crown minerals.
- Staff completed their review and industry consultations on revisions to *The Mineral Disposition Regulations, 1986*. Changes will be made to the regulations in 2000.
- The following permits and leases were issued during the year.

	Permits Issued in 1999-2000		Total Permits in Good Standing March 31, 2000	
	Permits	Hectares	Permits	Hectares
Mineral	1	18,000	2	28,000
Quarrying	0	0	1*	43,696
Alkali	1	n/a	13	Little Manitou
Coal	0	0	0	0
Subsurface	0	0	1	5,215

* Includes Special Agreement for silica sand exploration

	Leases Issued in 1999-2000		Total Leases in Good Standing March 31, 2000	
	Number	Hectares	Number	Hectares
Mineral	0	0	123	135.526
Quarrying	8	324	98	4,209
Alkali	0	0	33	12,214
Coal	13	359	718	104,296
Subsurface	0	0	12	217,164
Total	**21**	**683**	**984**	**473,409**

6. Administration of Crown Oil and Gas Rights

The department administers and reviews all dispositions of Crown oil and gas rights to ensure that regulatory requirements are met. This process was expanded with the implementation of the requirements for deeper rights. A registry of conveyance agreements, encumbrances, and securities related to Crown dispositions is maintained to monitor business activity and regulated operations.

A database is used to invoice lease rentals and to monitor offset commitments and compensatory royalties. The registry system and search service is used by the oil and gas industry, lawyers, financial institutions, and many others.

The mandate for this program comes from:

- *The Crown Minerals Act;* and
- *The Petroleum and Natural Gas Regulations, 1969.*

Major Activities:

- All expiring and non-producing petroleum and natural gas dispositions were reviewed to determine whether the dispositions should be continued. A total of 11,052 dispositions were reviewed.
- A total of 4,323 disposition transactions and 5,882 searches were performed.
- Work requirements of permits and drilling reservations were monitored and offset commitments were reviewed and enforced.
- As shown in the following table, 7.08 million hectares of Crown oil and natural gas rights were under disposition as at March 31, 2000.

Oil and Natural Gas Dispositions

Category	As at March 31, 2000 Number	Hectares	As at March 31, 1999 Number	Hectares
Leases	21,368	5,059,956	20,984	4,981,533
Permits	63	468,478	154	1,147,865
Exploration Licences	116	292,479	67	189,515
Special Exploratory Permits	21	1,215,902	14	984,049
Special Agreements	5	45,066	5	45,066
Drilling Reservations	0	0	2	3,872
Total	**21,573**	**7,081,981**	**21,226**	**7,351,900**

- Twelve helium leases were under disposition with an area of 22,786 hectares and six helium permits were under disposition with an area of 154,784 hectares.
- Two oil shale leases were under disposition with an area of 32 hectares and three oil shale permit were under disposition with an area of 118,269 hectares.
- One gas storage agreement consisting of 195 hectares and 11 Lease of Space Agreements containing 25,786 hectares were in effect.

Resources:

The resource regulatory activity involved the full-time equivalent of 45.4 staff at a salary cost of $2,082,000. Other expenses were $496,000. Total expenses amounted to $2,578,000.

Administration

The department's administration function includes providing strategic leadership and organizational direction to the department as well as financial, human resources, communications, accommodation, and co-ordination services for the department's core business activities.

The administration activity ensures that the other program areas have the requisite level of human resources, facilities, equipment, and supplies to carry out their various functions. It also ensures that the department manages within its budget allocation, has adequate internal controls and safeguards government assets, that Financial Administration guidelines are followed, and that the provisions of *The Public Service Act* and the PS/GE Collective Bargaining Agreement provisions are upheld.

1. Human Resources

The department manages a strategic recruitment and selection process, provides responsive and effective classification services and advice to staff, and practices an open communication approach to human resources to foster a healthy labour relations climate.

Major Activities and Results

- The department completed 16 permanent staff competitions and 29 non-permanent hires during the fiscal year. All recruitment actions used competency-based standards.
- Considerable attention was devoted to assisting staff affected by the new classification plan and outstanding classification appeals.
- A series of eight workshops and seminars on healthy living were offered to department staff. The workshops and seminars were intended to promote awareness and to inform employees of techniques to improve their health and well-being. In addition, staff attended another 172 outside learning and development opportunities.
- The department sponsored a cultural awareness trip for 37 employees to Wanuskewin Heritage Park.

2. Administration and Financial Services

The department provides administrative and financial services including: financial management, budget preparation, expenditure accounting and reporting, procurement of goods, mail services, and vehicle co-ordination.

Major Activities and Results:

- The department processed 98 per cent of supplier payments on time, once again exceeding the government's goal of having its suppliers paid on time in 90 per cent of the cases. Post-audit results for the fiscal year 1999-2000 indicate that the department had no instances of noncompliance in the payment of invoices.
- The department's budget for 1999-2000 was $17,410,000 and it incurred actual expenditures of $17,332,000.
- In 1999-2000, the department completed its relocation of the head office that will save money over the term of the lease in lower annual accommodation charges.

3. Communications

Communications services include: responding to media inquiries; preparation of communications strategies; department printing requirements; advertising; display production; sales and distribution of technical and promotional publications; maintenance of the department reference library; and management of the department Internet web site and the public inquiry line. Communications activities were focused on:

- increasing investment in Saskatchewan's mining, oil and gas sectors; and
- raising public awareness of the benefits of the resource sectors in Saskatchewan.

Major Activities and Results:

- The department participated in the Canadian Institute of Mining, Metallurgy and Petroleum and the Prospectors and Developers Association trade shows in Toronto to attract investment and activity in Saskatchewan's mineral resources.
- Work continued on expanding the department's web site as an important source of information about Saskatchewan's energy and mineral resources.
- The staff responded to 6,605 inquiry calls, up 26 per cent from the previous year.
- The department promoted the Geological Open House and the Williston Basin Horizontal Well workshop. Both events are aimed at a technical audience and are intended to attract activity and investment in Saskatchewan resources.
- Staff provided a daily media monitoring service to executive management and the Minister's office.

4. Accommodation

Payments are made to the Saskatchewan Property Management Corporation for office, storage and lab accommodations, mail services, records management, and minor capital renovations.

The department's head office is located in Regina and it maintains field offices in Swift Current, Lloydminster, Kindersley, Estevan, La Ronge, and Creighton. All occupied space is leased from the Saskatchewan Property Management Corporation (SPMC).

Resources:

The administration activity involved the full-time equivalent of 19.5 staff at a salary cost of $918,000. Other expenses were $2,200,000, including $1,816,000 for accommodations. Total expenses amounted to $3,118,000.

Budget and Actual Expenditures

Sub-Vote	1999-00 Budget ($000s)	1999-00 Actual ($000s)	Variances ($000s)	Notes
Administration				
General Administration	$ 1,380	$ 1,302	$ (78)	1
Computer Services	1,511	1,448	(63)	1
Subtotal	**$ 2,891**	**$ 2,750**	**$ (141)**	
Accommodation and Central Services	**$ 1,915**	**$ 1,816**	**$ (99)**	2
Petroleum and Natural Gas	**$ 4,284**	**$ 4,238**	**$ 44**	3
Exploration and Geological Services	**$ 3,355**	**$ 3,293**	**$ (62)**	4
Mineral Revenues				
Mineral Revenue Collection	$ 1,746	$ 1,825	$ 79	5
Mineral Compensation	221	1,065	844	6
Subtotal	**$ 1,967**	**$ 2,890**	**$ 923**	
Resource Policy and Economics				
Resource Development and Taxation	$ 1,537	$ 1,359	$ (178)	7
Energy Sector Initiatives	1,461	896	(565)	8
Subtotal	**$ 2,998**	**$ 2,255**	**$ (743)**	
Total Expenses	**$ 17,410**	**$ 17,332**	**$ (78)**	
FTE Staff Complement	**241.4**	**227.9**	**(13.5)**	

Notes:

1) Savings in operating expenses.
2) Savings in minor capital expenses.
3) Additional field office travel expenses.
4) Savings due to vacancies.
5) Increase in valuation allowance for potential write-off of accounts receivable.
6) One-time alternate compensation arrangement to former owners of mineral rights.
7) Savings due to vacancies.
8) Savings due to changes to the national consultation process on climate change.

Activity	1999-00 Budget ($000s)	1999-00 Actual ($000s)	Variances ($000s)	Notes
Resource Development	$ 4,716	$ 4,600	$ (116)	1
Resource Policy	1,166	1,022	(144)	1
Energy Planning and Development	2,278	1,651	(627)	2
Resource Revenue Collection	3,497	4,363	866	3
Resource Regulation	2,458	2,578	120	4
Administration	3,295	3,118	(177)	5
Total Expenses	**$ 17,410**	**$ 17,332**	**$ (78)**	

Notes:

1) Savings due to staff vacancies.
2) Savings due to changes to the national consultation process on climate change.
3) One-time alternate compensation arrangement to former owners of mineral rights.
4) Additional field office travel expenses.
5) Savings in minor capital expenses.

Budget and Actual Revenues

	($ millions)			
	1999-2000 Actual	1999-2000 Budget	1999-2000 Variance	Notes
Non-renewable Resource Revenue				
Oil	$ 640.1	$ 244.0	$ 396.1	1
Natural Gas	91.8	59.9	31.9	2
Potash	169.5	194.4	(24.9)	3
Other Minerals	41.8	52.7	(10.9)	
Total Non-Renewable	**$ 943.2**	**$ 551.0**	**$ 392.2**	
Other Revenues				
Mineral Rights Tax	$ 8.0	$ 8.1	$ (0.1)	
Other Misc. Revenue	0.4	1.9	(1.5)	
Total Other	**$ 8.4**	**$ 10.0**	**$ (1.6)**	
Total Revenues	**$ 951.6**	**$ 561.0**	**$ 390.6**	

Major Variance Analysis

1) *The increase in oil revenues of $396.1 million is due largely to much higher than anticipated oil prices that averaged $23.16 per barrel in U.S. dollars compared to the budget estimate of $14.50 per barrel. The higher prices also led to increased drilling and production of oil. The lower Canada-U.S. exchange rate also increased provincial revenues from oil production.*

2) *The increase of $31.9 million in natural gas royalties and taxes is the result of higher than anticipated prices and increased production levels in response to higher natural gas prices. Natural gas prices averaged $2.80 per mcf compared to the budget estimate of $2.15 per mcf.*

3) *The decrease of $24.9 million in potash revenues is the result of higher than expected costs reported by producers, reducing the potash profit taxes payable.*

Major Saskatchewan Resource Industries Statistical Summary

CRUDE OIL **(est)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production (million cubic metres)	11.70	12.25	12.42	13.37	14.97	17.19	18.75	20.94	23.45	23.15	21.70
Value of Production ($ millions)	$1,242	$1,613	$1,185	$1,407	$1,472	$1,878	$2,293	$3,105	$2,869	$1,933	$3,053
Direct Employment	4,160	4,580	4,330	4,630	5,410	5,730	6,070	6,840	7,860	5,640	5,620
Capital Spending ($ millions)	$239	$385	$324	$260	$558	$985	$1,045	$1,436	$2,545	$1,141	$846
Wells Drilled	471	821	672	632	1,315	1,421	1,882	2,544	3,608	1,064	1,390
Revenues to Provinces* ($ millions)											
Net Royalty/Tax	$196.2	$236.4	$168.1	$227.8	$198.5	$306.4	$346.9	$525.1	$354.4	$233.6	$565.6
Oil and Gas Land Bonus Bids**	$40.2	$27.9	$12.0	$17.1	$84.0	$202.0	$67.6	$140.8	$109.2	$48.7	$48.1
Other***	$17.9	$18.7	$18.1	$17.3	$17.9	$20.2	$32.8	$24.8	$25.1	$22.2	$26.4
Total	$254.3	$283.0	$198.2	$262.2	$300.4	$528.6	$447.3	$690.7	$488.7	$304.5	$640.1

NATURAL GAS **(est)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production (million cubic metres)	6,156	6,939	7,320	7,474	7,667	8,519	8,715	8,066	7,818	7,686	7,893
Sales ($ millions)	$281	$ 340	$ 357	$323	$358	$490	$347	$343	$395	$423	$612
Net Royalty/Tax ($ millions)*	$34.6	$49.6	$42.8	$34.0	$50.3	$61.4	$41.3	$53.0	$44.1	$65.9	$91.8
Direct Employment	520	410	385	305	625	670	395	440	425	580	740
Capital Spending ($ millions)	$165	$92	$ 78	$37	$170	$169	$42	$64	$55	$73	$114
Wells Drilled	1,009	565	461	211	969	1,000	265	364	327	634	1,038

POTASH **(est)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production (thousand K_20) tonnes)	6,509	6,015	6,299	6,179	5,824	7,148	7,925	6,969	8,297	8,646	7,909
Sales ($ millions)	$880	$794	$769	$814	$ 800	$1,107	$1,219	$1,116	$1,505	$1,625	$1,634
Net Royalty/Tax ($ millions)*	$31.3	$49.9	$50.8	$57.1	$51.3	$89.0	$122.3	$87.6	$189.5	$202.5	$169.5
Direct Employment	3,157	3,146	3,160	3,030	2,885	2,879	2,958	2,978	3,012	3,143	3,079
Capital Spending ($ millions)	$49	$ 45	$46	$43	$ 38	$53	$70	$108	$128.7	$160.6	$101.2

* *All revenue figures, including royalties/taxes, are for the fiscal year beginning in the year shown.*

** *Land bonus bids are less the Sand Hill credits.*

*** *Other revenues include lease rentals, interest, and net royalty payments, for the fiscal year beginning in the year shown.*

Major Saskatchewan Resource Industries Statistical Summary

URANIUM

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998 (est.)	1999 (est.)
Production (million kg)	8.7	6.8	8.1	9.8	10.0	10.6	11.6	13.3	14.2	N/A	N/A
Sales ($ millions)	$380	$344	$304	$ 381	$ 375	$ 408	$ 432	$ 651	$ 557	N/A	N/A
Royalty/Tax ($ millions)*	$15.5	$19.3	$14.5	$26.4	$31.7	$20.2	$44.7	$57.9	$38.5	N/A	N/A
Direct Employment	1,129	903	1,053	1,052	1,198	1,204	1,458	1,749	1,918	N/A	N/A
Capital Spending ($ millions)	$11	$28	$52	$9	$54	$37	$126	$245	$277	N/A	N/A

COAL

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998 (est.)	1999 (est.)
Production (million tonnes)	10.8	9.4	9.0	10.1	10.0	10.7	10.7	10.8	11.6	N/A	N/A
Sales ($ millions)	$100	$100	$94	$100	$94	$104	$116	$116	$122	N/A	N/A
Royalty/Tax ($ millions)*	$13.9	$12.3	$15.8	$13.3	$15.3	$15.6	$15.2	$15.1	$17.4	N/A	N/A
Direct Employment	601	523	500	559	558	573	537	540	580	N/A	N/A
Capital Spending ($ millions)	$48	$7	$9	$11	$23	$8	$5	$6	$9	N/A	N/A

PRECIOUS AND BASE METALS

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998 (est.)	1999 (est.)
Gold											
Production (1000 troy ounces)	87.0	108.9	98.9	86.4	57.1	50.5	94.8	106.9	131.5	N/A	N/A
Sales ($ millions)	$45.0	$43.7	$33.4	$37.1	$25.8	$25.3	$45.4	$55.8	$67.5	N/A	N/A
Silver											
Production (1000 troy ounces)	26.2	8.0	6.1	7.3	nil	nil	nil	nil	N/A	N/A	N/A
Sales ($ millions)	$0.2	$0.04	$0.03	$0.04	nil	nil	nil	nil	N/A	N/A	N/A
Base Metals											
Production (million kg)	2.2	0.5	0.7	0.7	nil	nil	nil	nil	N/A	N/A	N/A
Sales ($ millions)	$4.1	$1.1	$1.3	$0.9	nil	nil	nil	nil	N/A	N/A	N/A
Precious and Base Metals											
Revenues ($ millions)*	$0.8	$0.8	$1.8	$1.2	$1.3	$1.0	$0.4	$0.7	$1.0	N/A	N/A
Direct Employment	122	179	158	100	157	188	232	357	327	N/A	N/A
Capital Spending ($ millions)	$11	$6	$22	nil	$4.5	$43	$10	$15	$6	N/A	N/A

OTHER**

includes Bentonite, Quarriable Materials, Coal, Uranium, Gold, Silver & Base Metals

	1996	1997	1998 (est.)	1999 (est.)
Production (million tonnes)	10,895.0	11,667.6	11,815.8	11,689.4
Sales ($ million)	$824.1	$750.2	$641.7	$671.2
Revenues ($ million)*	$ 73.7	$ 56.9	$ 47.2	$ 39.8
Direct Employment (mine site)****	2,646	2,825	2,704	2,507
Capital Spending ($ millions)	$ 266	$ 292	$ 306	$ 249
Exploration expenditures ($ millions)***	$ 36.1	$ 43.5	$ 30.1	$ 23.1

* *All revenue figures, including royalties/taxes, are for the fiscal year beginning in the year shown.*

** *Significant changes in the number of companies producing minerals in Saskatchewan occurred in 1998. Regulatory requirements related to confidentiality do not permit commodity specific information to be released where there are less than three producing companies. This information is aggregated and presented in the category "other" which includes Bentonite, Quarriable Materials, Coal, Uranium, Gold, Silver and Base Metals.*

*** *Uranium, Precious and Base Metals, Diamonds, Silica Sand, and Rare Earth Minerals.*

**** *Additionally, approximately 300 Saskatchewan residents are employed at the HBMS operations in Flin Flon, Manitoba.*

Major Saskatchewan Resource Industries Statistical Summary

OTHER MINERALS											(est)
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sodium Sulphate											
Production (thousand tonnes)	289.2	307.9	274.2	283.9	320.4	313.9	313.7	327.3	292.1	287.3	278.7
Value of Sales ($ millions)	$23.1	$23.7	$20.1	$22.5	$25.3	$26.1	$25.6	$31.8	$32.1	$29.8	$24.8
Revenues ($ millions)*	$0.8	$0.9	$0.7	$1.1	$1.5	$1.2	$1.4	$1.6	$1.5	$1.4	$1.2
Direct Employment (mine site)	158	166	169	147	136	137	143	125	144	159	119
Salt											
Production (thousand tonnes)	411.0	567.9	549.1	578.1	511.9	620.2	701.7	811.2	875.0	750.4	755.8
Sales ($ millions)	$19.9	$20.2	$20.8	$18.1	$24.3	$20.2	$22.5	$27.8	$29.7	$27.8	$26.5
Revenues ($ millions)*	$0.6	$0.6	$0.6	$0.6	$0.6	$0.6	$0.6	$0.9	$0.8	$0.7	$0.8
Direct Employment (mine site)	218	225	260	224	205	224	224	219	206	198	172
Bentonite and Other Quarriable Materials											
Bentonite Production (thousand tonnes)	56.5	7.1	1.0	4.9	10.5	13.9	12.4	15.3	18.9	N/A	N/A
Bentonite Sales ($ millions)	$3.4	$0.4	$0.1	$0.4	$0.9	$1.1	$1.0	$1.3	$1.6	N/A	N/A
Quarriable Materials Revenues ($ millions)*	$0.2	$0.2	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	N/A	N/A

MAJOR RESOURCE INDUSTRIES TOTALS											(est)
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Value of Sales/Production ($ millions)	$2,978.7	$3,280.1	$2,784.7	$3,104.0	$3,175.3	$4,059.7	$4,501.5	$5,447.7	$5,581.0	$4,680.3	$6,021.5
Royalties and other Revenues ($ millions)	$352.0	$416.6	$325.2	$396.0	$452.4	$717.7	$673.3	$907.6	$781.5	$622.2	$943.2
Direct Employment	10,065	10,132	10,015	10,047	11,174	11,605	12,017	13,248	14,472	12,424	12,237
Capital Spending ($ millions)	$523	$563	$531	$360	$847.5	$1,295	$1,298	$1,874	$3,021	$1,681	$1,310

* *All revenue figures, including royalties/taxes, are for the fiscal year beginning in the year shown.*